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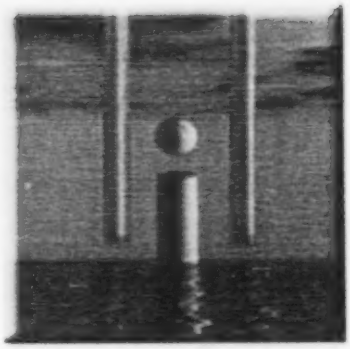
The Canadian Productivity Review

Revisions to Canada and United States Annual Estimates of Labour Productivity in the Business Sector, 2004 to 2007



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Statistics Canada
Micro Economic Studies and Analysis Division

Revisions to Canada and United States Annual Estimates of Labour Productivity in the Business Sector, 2004 to 2007

Mustapha Kaci and Jean-Pierre Maynard

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Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

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Abstract

This paper examines the impact of the revisions to labour productivity estimates and related variables covering the revision cycle of the National Accounts from 2004 to 2007 for Canada and from 2005 to 2007 for the United States.

1 Introduction

In this paper, we compare recent revisions to the labour productivity estimates in Canada and the United States[1]. These regular revisions to preliminary estimates extend back four years.

Revisions to Canadian labour productivity estimates have been made in June 2008 and in December 2008 in order to incorporate the latest available gross domestic product (GDP) estimates published by the National Economic and Financial Accounts and the annual benchmarks on hours worked. These revisions relate to the last four years (2004 to 2007). Recent productivity data are produced on the basis of preliminary GDP and hours worked estimates, which are eventually revised when additional and more precise information sources become available for the National Accounts.

In August 2008, revisions were also made to labour productivity in the United States for the three last years, from 2005 to 2007.

2 Revision process

The estimates of labour productivity (output per hour worked) that are produced by the Canadian Productivity Accounts are subject to two types of revisions. Please take note that revisions for this year are only of the first type.

Revisions of the first type are a series of annual revisions in the gross domestic product (GDP) that go back over a four-year period (Statistics Canada, 2008). With this revision cycle, a preliminary estimate of GDP first released in year t is revised annually over the four subsequent years (t+1 to t+4) as more detailed and accurate data become available to the System of National Accounts (SNA).

When first released, estimates of GDP at the industrial sector level come from projecting past estimates using a small number of readily measured series (for example, the GDP in Taxi and Limousine Services is projected off the Survey of Employment, Payrolls and Hours [SEPH] estimate of employment growth in these industries). The industry estimates are gradually supplemented by far more detailed and accurate data that are obtained from surveys such as the Annual Survey of Manufactures and the Unified Enterprise Survey, and from administrative tax records that become available after a lag of one or two years. Preliminary estimates of GDP that are calculated from final demand are also projected the first time from sources that are eventually replaced by more comprehensive information.

In addition, the labour productivity estimates for year t are revised in year t+1 as new information becomes available to improve the first estimates of employment and hours worked that are made using the Labour Force Survey (LFS) and SEPH. These revisions improve the estimates of hours worked because more precise measures of holidays and other non-random events are used (Maynard 2005). Revisions also occur if the employment estimates for the non-commercial sector obtained from the Public Institutions Division and produced with SEPH are revised, since the business sector estimate is obtained residually after removing the non-commercial sector from the total economy.

1. These estimates are derived from the expenditure side of the National Accounts valued at market prices.

Revisions of the second type occur less frequently, about once or twice every 10 years. Historical revisions of the SNA are occasionally carried out to eliminate breaks in some series, to modify classification standards (for example, the movement from the Standard Industrial Classification to the North American Industry Classification System) or to introduce conceptual and methodological changes. These revisions of the second type occur when the SNA updates the method used for measuring certain industries, sometimes because of changes in the international standards to which it adheres (SNA93). For example, in 2001, Statistics Canada included software expenditures as investment for the first time[2]. In addition, the adoption of Fisher chain indices instead of fixed base Laspeyres indices has introduced revisions to GDP and, therefore, a historical revision to the labour productivity estimates.

Historical revisions also occur in the employment and hours worked data when the LFS is occasionally re-benchmarked against data from the most recent Census of Population.

3 Impact of revisions on labour productivity

In this section, we compare recent revisions to the labour productivity estimates for the business sector in Canada and the United States.

Revisions to Canadian labour productivity estimates have been made in June 2008 in order to incorporate the latest available gross domestic product (GDP) estimates published by the National Economic and Financial Accounts[3] and in December 2008 when revised annual benchmarks on hours worked were published. These revisions relate to the last four years (2004 to 2007). The revisions to estimates of labour productivity, GDP and volume of hours worked, which extend back to 2000, are presented in Tables 1 to 3 . These tables show a picture of the evolution of the estimates over the last seven revision rounds since 2002. It should be noted that the revision cycles of the most recent estimates are not yet completed. This is the case for the 2005-to-2007 estimates for Canada and the 2006 and 2007 ones in the United States. The estimates produced during the first four-year revision cycle appear with the footnote marker "1." Other revisions reflect revisions of the second type outlined above.

Table 4 of this paper shows the impact of revisions on the respective labour productivity performance of Canada and the United States for two periods—1981 to 2000 and 2000 to 2007[4]. It should be noted that the latter period is less than a business cycle in length and covers the years since the end of the previous peak in productivity growth that was observed in 2000. It also corresponds to a period (except for 2000 to 2003) when only preliminary estimates of GDP are available. The former period, however, contains mainly estimates that are past the preliminary revision cycle. It essentially covers two business cycles and therefore provides a better comparison of differences in long-term trends between Canada and the United States[5]. Productivity estimates of short-term changes are generally more volatile than estimates of changes over the long term.

2. The United States had made this change in 1999.
3. Recent productivity data are produced on the basis of preliminary gross domestic product estimates, which are eventually revised when additional and more precise information becomes available to the National Accounts.
4. Including also two sub periods, 2000 to 2004 and 2004 to 2007.
5. Quarterly measures of productivity in the Canadian business sector are available from 1981 onward.

3.1 Impact of Canadian revisions

In general, the revisions of the Canadian productivity figures for the period from 2004 to 2007 that were published in *The Daily* on December 10, 2008, resulted in almost no change from previous estimates. For businesses on the whole, the revisions had the impact of reducing the annual rate of growth in Canada's labour productivity for 2005, and increasing it for 2004, 2006 and 2007. The magnitude of the revisions ranged from a 0.3% decline in 2005 to a 0.3% gain in 2006.

For this entire period, average annual productivity growth was revised upward by 0.1%. It should be noted that calculations of the productivity growth rate and its related variables are now based on index numbers rounded to three decimal places. On CANSIM, these calculations would still be based on index numbers rounded to one decimal place.

3.2 Impact of American revisions

On the other hand, the annual growth rate of labour productivity in American businesses that was published in *News* of the Bureau of Labor Statistics on August 8, 2008, was revised downward for each of the last three years, from 2005 to 2007. For this whole period, the revised estimates show that productivity increased only 1.2% on average, 0.3 percentage point less than the previously published estimates indicated.

Thus, the average annual rate of productivity in the United States reached 1.8% in 2005 (instead of 2.0%), 0.9% in 2006 (instead of 1.0%) and 1.5% in 2007 (instead of 1.9%). Annual productivity growth in the United States has slowed gradually since 2002 (the year where it peaked at 4.1%), before rebounding slightly in 2007.

Since 2002, the United States has systematically revised downwards its preliminary estimates of labour productivity. On average, revisions have reduced productivity growth by -0.8 percentage point on an annual basis.

3.3 Analysis of the gap between Canada and the United States

With those revisions, average annual productivity growth in American businesses over the period from 2004 to 2007 was 1.4% (compared to 1.6% before revisions), the same growth rate as in Canadian businesses. Both the old and the new estimates of growth in labour productivity and hours worked are presented in table 4.

However, there was a substantial difference in average annual productivity growth between Canada and the United States from 2000 to 2004, with U.S. productivity growing almost five times faster than Canada's.

Between 2000 and 2004, the average annual growth in U.S. productivity was 3.3%, compared to the 0.7% posted in Canada.

Over the 2000-to-2007 period, the average annual growth rate was 1.0% in Canada and 2.5% in the United States; U.S. productivity growth was two and a half times higher than that of its Canadian counterpart. During that period, real GDP growth was similar on both sides of the border, but hours worked increased at a faster pace in Canada. More precisely, GDP growth in

Canada was 2.5% on average per year from 2000 to 2007, while the hours worked increased by 1.5%. In comparison, the U.S. GDP grew by 2.5% on average, while hours worked remainded unchanged during the same period.

It should be noted that the period from 2000 to 2007 covers much less than a full business cycle. In the early 1990s, Canada also lagged behind the United States in productivity growth, particularly during the recessionary period, but ended up at approximately the same point by the end of the decade.

It is also important to note that the annual productivity differences reported over the period from 2000 to 2007 are based on preliminary data that are still subject to revision. Since 2002, the United States has also systematically revised downward its preliminary estimates of productivity. It is important to take into account this additional margin of error when analysing data of recent years.

Since 1998, the Canada–United States gap has generally shrunk, following revisions to the preliminary data. The main revision made to the Canadian productivity estimate in 1999 is almost entirely due to revisions in GDP. Almost half the revision in 2000 comes from this source[6]. During this period, two changes were made to the Canadian System of National Accounts, which increased the rate of growth of output and therefore of labour productivity. First, software expenditures were capitalized (the United States had introduced this in 1999). Second, new surveys were gradually introduced, which were associated with the Project to Improve Provincial Economic Statistics whose economic survey coverage had been extended[7]. During this period, the productivity program also revised its estimate of hours worked, downward[8].

Over a longer period (1981 to 2000), there is a small gap in productivity growth between Canada and the United States (0.3 percentage point per year), some of which may arise from slightly different methods used to calculate the growth in labour inputs (Maynard 2007). For this period, productivity has grown at an average annual rate of 1.6% in Canada compared with 1.9% in the United States.

4 Conclusion

All things considered, the 2004-to-2007 revisions of gross domestic product (GDP) in Canada (and the 2005-to-2007 revisions of GDP in the United States) resulted in a slight narrowing of the gap in productivity growth. Since the most recent revisions applied only to the period after 2000, they have had little effect on Canada–United States differences over the last two decades—from 1981 to 2000. During this period, Statistics Canada's estimates of productivity

6. The remainder came from a revision to the labour statistics.
7. The gross domestic product revisions in 1999 and 2000 came from new benchmarks of manufacturing activity derived from the Project of Improve Provincial Economic Statistics, upward revisions in exports, and the incorporation of software as an investment rather than as an intermediate expenditure. In addition, the productivity program fully integrated its output measure with that produced by the Income and Expenditure Accounts Division.
8. The revisions in hours worked in 2000 came from new information on the methodology actually followed by the Labour Force Survey for 2000 but not for other years. The information resulted in an upward adjustment in holidays in that year.

growth have consistently shown an annual gap of 0.3 percentage point between Canada and the United States. For a more extensive discussion of the significance of the difference and the causes behind it, see Statistics Canada (2007).

5 Statistical Tables

Table 1
Labour productivity, business sector, annual change, Canada and United States

	2000	2001	2002	2003	2004	2005	2006	2007
Canada				percent				
First estimates published for 2000 (fourth quarter). *The Daily release of March 29, 2001*	1.4[1]	...	...	...	...	...	...	...
After the revisions round in 2000 (first quarter). *The Daily release of June 25, 2001*	1.6[1]	...	...	...	...	...	...	...
First estimates published for 2001 (Fourth quarter). *The Daily release of March 14, 2002*	1.5[1]	1.2[1]	...	...	...	...	...	...
After the revisions round in 2001 (first quarter). *The Daily release of June 14, 2002*	2.1[1]	0.8[1]	...	...	...	...	...	...
First estimates published for 2002 (fourth quarter). *The Daily release of March 14, 2003*	2.1[1]	0.8[1]	2.2[1]	...	...	...	...	...
After the revisions round in 2002 (first quarter). *The Daily release of June 12, 2003*	3.1[1]	1.2[1]	1.8[1]	...	...	...	...	...
First estimates published for 2003 (fourth quarter). *The Daily release of March 12, 2004*	3.8[1]	1.0[1]	1.9[1]	0.1[1]	...	...	...	...
After the revisions round in 2003 (first quarter). *The Daily release of June 11, 2004*	3.9[1]	1.4[1]	2.3[1]	0.4[1]	...	...	...	...
First estimates published for 2004 (fourth quarter). *The Daily release of March 10, 2005*	3.6	1.7[1]	2.5[1]	0.2[1]	0.0[1]	...	...	...
After the revisions round in 2004 (first quarter). *The Daily release of June 9, 2005*	3.4	1.5[1]	2.1[1]	0.2[1]	0.0[1]	...	...	...
First estimates published for 2005 (fourth quarter). *The Daily release of April 26, 2006*	3.4	1.1	1.4[1]	0.4[1]	0.0[1]	2.2[1]	...	...
After the revisions round in 2005 (first quarter). *The Daily release of June 8, 2006*	3.4	1.1	1.4[1]	0.0	0.3[1]	2.3[1]	...	...
First estimates published for 2006 (fourth quarter). *The Daily release of March 12, 2007*	3.6	1.1	1.4	0.0[1]	0.3[1]	2.1[1]	1.2[1]	...
After the revisions round in 2006 (first quarter). *The Daily release of June 12, 2007*	3.6	1.1	1.3	0.2[1]	0.0[1]	2.5[1]	1.0[1]	...
First estimates published for 2007 (fourth quarter). *The Daily release of March 14, 2008*	3.6	1.1	1.3	0.2	0.0[1]	2.5[1]	1.1[1]	0.5[1]
After the revisions round in 2007 (third quarter). *The Daily release of December 10, 2008*	3.6	1.1	1.3	0.2	0.2[1]	2.2[1]	1.4[1]	0.7[1]
Difference, original and actual estimates[2]	2.2	-0.1	-0.9	0.1	0.2	0.0	0.2	0.2

See footnotes at the end of the table

Table 1
Labour productivity, business sector, annual change, Canada and United States (continued)

	2000	2001	2002	2003	2004	2005	2006	2007
United States				percent				
First estimates published for 2000 (fourth quarter). *Bureau of Labour Statistics release of June 5, 2001*	4.2[1]	...	...	...	...	...	...	...
After the revisions round in 2000 (first quarter). *Bureau of Labour Statistics release of August 7, 2001*	3.1[1]	...	...	...	...	...	...	...
First estimates published for 2001 (fourth quarter). *Bureau of Labour Statistics release of May 31, 2002*	3.4[1]	2.0[1]	...	...	...	...	...	...
After the revisions round in 2001 (first quarter). *Bureau of Labour Statistics release of August 9, 2002*	3.0[1]	1.1[1]	...	...	...	...	...	...
First estimates published for 2002 (fourth quarter). *Bureau of Labour Statistics release of June 4, 2003*	3.0[1]	1.1[1]	4.8[1]	...	...	...	...	...
After the revisions round in 2002 (first quarter). *Bureau of Labour Statistics release of August 7, 2003*	3.1[1]	2.0[1]	5.3[1]	...	...	...	...	...
First estimates published for 2003 (Fourth quarter). *Bureau of Labour Statistics release of March 4, 2004*	2.9[1]	2.2[1]	4.9[1]	4.5[1]	...	...	...	...
After the revisions round in 2003 (first quarter). *Bureau of Labour Statistics release of August 10, 2004*	2.9[1]	2.5[1]	4.3[1]	4.5[1]	..	...	...	...
First estimates published for 2004 (fourth quarter). *Bureau of Labour Statistics release of March 3, 2005*	2.9	2.5[1]	4.3[1]	4.5[1]	4.0[1]	...	...	...
After the revisions round in 2004 (first quarter). *Bureau of Labour Statistics release of August 9, 2005*	2.8	2.5[1]	4.0[1]	3.9[1]	3.4[1]	...	...	...
First estimates published for 2005 (fourth quarter). *Bureau of Labour Statistics release of March 7, 2006*	2.8	2.5	4.0	4.1[1]	3.5[1]	2.7[1]	...	...
After the revisions round in 2005 (first quarter). *Bureau of Labour Statistics release of August 8, 2006*	2.9	2.6	4.1	3.8[1]	3.1[1]	2.3[1]	...	...
First estimates published for 2006 (fourth quarter). *Bureau of Labour Statistics release of March 6, 2007*	2.9	2.6	4.1	3.8	3.1[1]	2.1[1]	1.7[1]	...
After the revisions round in 2006 (first quarter). *Bureau of Labour Statistics release of August 7, 2007*	2.9	2.6	4.1	3.8	2.9[1]	2.0[1]	1.0[1]	...
First estimates published for 2007 (fourth quarter). *Bureau of Labour Statistics release of March 5, 2008*	2.9	2.6	4.1	3.8	2.9	2.0[1]	1.0[1]	1.9[1]
After the revisions round in 2007 (first quarter). Bureau of Labour Statistics release of August 8, 2008	2.9	2.6	4.1	3.8	2.9	1.8[1]	0.9[1]	1.5[1]
Difference, original and actual estimates2	-1.3	0.6	-0.7	-0.7	-1.1	-0.9	-0.8	-0.4

1 This estimate covers the four-year period of annual revisions that arise from the gross domestic product revision cycle. In Canada, the System of National Accounts revisions are usually made available with the release of the first quarter, while in the United States it is published with the preliminary estimates of the second quarter.

2 For some years, the revision process reflects more than the short-term revision round. For example, for 2000, methodological changes were implemented for both hours worked and gross domestic product, which had the effect of exaggerating the impact of short-term revisions.

Source(s): Statistics Canada; Bureau of Labor Statistics.

Table 2
Real gross domestic product, business sector, annual change, Canada and United States

	2000	2001	2002	2003	2004	2005	2006	2007
Canada				percent				
First estimates published for 2000 (fourth quarter). *The Daily release of March 29, 2001*	5.3[1]	...	...	...	...	...	...	...
After the revisions round in 2000 (first quarter). *The Daily release of June 25, 2001*	5.2[1]	...	...	...	...	...	...	...
First estimates published for 2001 (fourth quarter). *The Daily release of March 14, 2002*	5.2[1]	1.2[1]	...	...	...	...	...	...
After the revisions round in 2001 (first quarter). *The Daily release of June 14, 2002*	5.4[1]	0.9[1]	...	...	...	...	...	...
First estimates published for 2002 (fourth quarter). *The Daily release of March 14, 2003*	5.4[1]	0.9[1]	3.8[1]	...	...	...	...	...
After the revisions round in 2002 (first quarter). *The Daily release of June 12, 2003*	6.3[1]	1.3[1]	3.4[1]	...	...	...	...	...
First estimates published for 2003 (fourth quarter). *The Daily release of March 12, 2004*	6.3[1]	1.3[1]	3.4[1]	1.5[1]	...	...	...	...
After the revisions round in 2003 (first quarter). *The Daily release of June 11, 2004*	6.3[1]	1.8[1]	3.6[1]	1.7[1]	...	...	...	...
First estimates published for 2004 (fourth quarter). *The Daily release of March 10, 2005*	6.3	1.8[1]	3.6[1]	1.7[1]	2.9[1]	...	...	...
After the revisions round in 2004 (first quarter). *The Daily release of June 9, 2005*	6.1	1.6[1]	3.2[1]	1.6[1]	3.1[1]	...	...	...
First estimates published for 2005 (fourth quarter). *The Daily release of April 26, 2006*	6.0	1.6	3.2[1]	1.6[1]	3.1[1]	2.8[1]	...	...
After the revisions round in 2005 (first quarter). *The Daily release of June 8, 2006*	6.0	1.6	3.1[1]	1.4[1]	3.3[1]	3.0[1]	...	...
First estimates published for 2006 (fourth quarter). *The Daily release of March 12, 2007*	6.0	1.6	3.1	1.4[1]	3.3[1]	3.0[1]	2.7[1]	...
After the revisions round in 2006 (first quarter). *The Daily release of June 12, 2007*	6.0	1.6	3.0	1.5[1]	3.2[1]	3.2[1]	2.6[1]	...
First estimates published for 2007 (fourth quarter). *The Daily release of March 14, 2008*	6.0	1.6	3.0	1.5	3.2[1]	3.2[1]	2.7[1]	2.6[1]
After the revisions round in 2007 (first quarter). *The Daily release of June 13, 2008*	6.0	1.6	3.0	1.5	3.2[1]	2.9[1]	3.1[1]	2.6[1]
Difference, original and actual estimates	0.7	0.4	-0.8	-0.1	0.3	0.1	0.4	0.0

See footnotes at the end of the table

Table 2
Real gross domestic product, business sector, annual change, Canada and United States (continued)

	2000	2001	2002	2003	2004	2005	2006	2007
United States	percent							
First estimates published for 2000 (fourth quarter), Bureau of Labour Statistics release of June 5, 2001	5.6[1]	...	...	...	...	...	...	...
After the revisions round in 2000 (first quarter), *Bureau of Labour Statistics release of August 7, 2001*	4.6[1]	...	...	...	...	...	...	...
First estimates published for 2001 (fourth quarter), *Bureau of Labour Statistics release of May 31, 2002*	4.6[1]	0.9[1]	...	...	...	...	...	...
After the revisions round in 2001 (first quarter), *Bureau of Labour Statistics release of August 9, 2002*	4.1[1]	-0.1[1]	...	...	...	...	...	...
First estimates published for 2002 (fourth quarter), *Bureau of Labour Statistics release of June 4, 2003*	4.1[1]	-0.1[1]	2.7[1]	...	...	...	...	...
After the revisions round in 2002 (first quarter), *Bureau of Labour Statistics release of August 7, 2003*	4.1[1]	-0.1[1]	2.7[1]	...	...	...	...	...
First estimates published for 2003 (fourth quarter), *Bureau of Labour Statistics release of March 4, 2004*	3.9[1]	0.1[1]	2.3[1]	3.7[1]	...	...	...	...
After the revisions round in 2003 *(first quarter), Bureau of Labour Statistics release of August 10, 2004*	3.9[1]	0.3[1]	1.8[1]	3.8[1]	...	...	...	...
First estimates published for 2004 (fourth quarter), *Bureau of Labour Statistics release of March 3, 2005*	3.9	0.3[1]	1.8[1]	3.8[1]	5.1[1]	...	...	...
After the revisions round in 2004 (first quarter), *Bureau of Labour Statistics release of August 9, 2005*	3.9	0.3[1]	1.5[1]	3.4[1]	4.7[1]	...	...	...
First estimates published for 2005 (fourth quarter), *Bureau of Labour Statistics release of March 7, 2006*	3.9	0.3	1.5	3.4[1]	4.8[1]	4.0[1]	...	...
After the revisions round in 2005 (first quarter), *Bureau of Labour Statistics release of August 8, 2006*	3.9	0.3	1.5	3.1[1]	4.4[1]	3.7[1]	...	...
First estimates published for 2006 (fourth quarter), *Bureau of Labour Statistics release of March 6, 2007*	3.9	0.3	1.5	3.1	4.4[1]	3.7[1]	3.8[1]	...
After the revisions round in 2006 (first quarter), *Bureau of Labour Statistics release of August 7, 2007*	3.9	0.3	1.5	3.1	4.2[1]	3.6[1]	3.1[1]	...
First estimates published for 2007 (fourth quarter), *Bureau of Labour Statistics release of March 5, 2008*	3.9	0.3	1.5	3.1	4.2	3.6[1]	3.1[1]	2.3[1]
After the revisions round in 2007 (first quarter), *Bureau of Labour Statistics release of August 8, 2008*	3.9	0.3	1.5	3.1	4.2	3.5[1]	3.0[1]	2.0[1]
Difference, original and actual estimates	-1.7	-0.6	-1.2	-0.6	-0.9	-0.5	-0.8	-0.3

1. This estimate covers the four-year period of annual revisions that arise from the gross domestic product revision cycle. In Canada, the System of National Accounts revisions are usually made available with the release of the first quarter, while in the United States it is published with the preliminary estimates of the second quarter.

Source(s): Statistics Canada, Bureau of Labor Statistics.

Table 3
Hours worked, business sector, annual change, Canada and United States

	2000	2001	2002	2003	2004	2005	2006	2007
Canada				percent				
First estimates published for 2000 (fourth quarter). *The Daily release of March 29, 2001*	3.8	...	...	...	...	...	...	...
After the revisions round in 2000 (first quarter). *The Daily release of June 25, 2001*	3.7	...	...	...	...	...	...	...
First estimates published for 2001 (fourth quarter). *The Daily release of March 14, 2002*	3.7	0.0	...	...	...	...	...	...
After the revisions round in 2001 (first quarter). *The Daily release of June 14, 2002*	3.1	0.1	...	...	...	...	...	...
First estimates published for 2002 (fourth quarter). *The Daily release of March 14, 2003*	3.1	0.1	1.5	...	...	...	...	...
After the revisions round in 2002 (first quarter). *The Daily release of June 12, 2003*	3.1	0.1	1.5	...	...	...	...	...
First estimates published for 2003 (fourth quarter). *The Daily release of March 12, 2004*	2.2	0.4	1.4	1.5	...	...	...	...
After the revisions round in 2003 (first quarter). *The Daily release of June 11, 2004*	2.2	0.4	1.4	1.3	...	...	...	...
First estimates published for 2004 (fourth quarter). *The Daily release of March 10, 2005*	2.5	0.1	1.1	1.5	2.8	...	...	...
After the revisions round in 2004 (first quarter). *The Daily release of June 9, 2005*	2.5	0.1	1.1	1.5	3.0	...	...	...
First estimates published for 2005 (fourth quarter). *The Daily release of April 26, 2006*	2.7	0.5	1.6	1.3	3.1	0.6	...	...
After the revisions round in 2005 (first quarter). *The Daily release of June 8, 2006*	2.7	0.5	1.6	1.3	3.1	0.6	...	...
First estimates published for 2006 (fourth quarter). *The Daily release of March 12, 2007*	2.4	0.5	1.6	1.4	2.9	1.0	1.5	...
After the revisions round in 2006 (first quarter). *The Daily release of June 12, 2007*	2.4	0.5	1.6	1.3	3.1	0.7	1.5	...
First estimates published for 2007 (fourth quarter). *The Daily release of March 14, 2008*	2.4	0.5	1.6	1.3	3.2	0.7	1.5	2.2
After the revisions round in 2007 (first quarter). *The Daily release of December 10, 2008*	2.4	0.5	1.6	1.3	3.0	0.8	1.6	1.9
Difference, original and actual estimates[1]	-1.4	0.5	0.1	-0.2	0.2	0.2	0.1	-0.3

See footnotes at the end of the table.

Table 3
Hours worked, business sector, annual change, Canada and United States (continued)

	2000	2001	2002	2003	2004	2005	2006	2007
United States				percent				
First estimates published for 2000 (fourth quarter), *Bureau of Labour Statistics release of June 5, 2001*	1.3	...	...	...	...	...	...	...
After the revisions round in 2000 (first quarter), *Bureau of Labour Statistics release of August 7, 2001*	1.5	...	...	...	...	...	...	...
First estimates published for 2001 (fourth quarter), *Bureau of Labour Statistics release of May 31, 2002*	1.2	-1.1	...	...	...	...	...	...
After the revisions round in 2001 (first quarter), *Bureau of Labour Statistics release of August 9, 2002*	1.1	-1.3	...	...	...	...	...	...
First estimates published for 2002 (fourth quarter), *Bureau of Labour Statistics release of June 4, 2003*	1.1	-1.3	-2.0	...	...	...	...	...
After the revisions round in 2002 (first quarter), *Bureau of Labour Statistics release of August 7, 2003*	1.0	-2.1	-2.5	...	...	...	...	...
First estimates published for 2003 (fourth quarter), *Bureau of Labour Statistics release of March 4, 2004*	1.1	-2.1	-2.5	-0.8	...	...	...	...
After the revisions round in 2003 (first quarter), *Bureau of Labour Statistics release of August 10, 2004*	1.1	-2.2	-2.4	-0.6	...	...	...	...
First estimates published for 2004 (fourth quarter), *Bureau of Labour Statistics release of March 3, 2005*	1.1	-2.2	-2.4	-0.6	1.2	...	...	...
After the revisions round in 2004 (first quarter), *Bureau of Labour Statistics release of August 9, 2005*	1.2	-2.2	-2.4	-0.5	1.3	...	...	...
First estimates published for 2005 (fourth quarter), *Bureau of Labour Statistics release of March 7, 2006*	1.1	-2.1	-2.4	-0.7	1.3	1.3	...	...
After the revisions round in 2005 (first quarter), *Bureau of Labour Statistics release of August 8, 2006*	1.1	-2.2	-2.5	-0.7	1.3	1.4	...	...
First estimates published for 2006 (fourth quarter), *Bureau of Labour Statistics release of March 6, 2007*	1.1	-2.2	-2.5	-0.7	1.3	1.6	2.1	...
After the revisions round in 2006 (first quarter), *Bureau of Labour Statistics release of August 7, 2007*	1.1	-2.2	-2.5	-0.7	1.3	1.6	2.1	...
First estimates published for 2007 (fourth quarter), *Bureau of Labour Statistics release of March 5, 2008*	1.1	-2.2	-2.5	-0.7	1.3	1.6	2.1	0.4
After the revisions round in 2007 (first quarter), *Bureau of Labour Statistics release of August 8, 2008*	1.1	-2.2	-2.5	-0.7	1.3	1.6	2.1	0.5
Difference, original and actual estimates[1]	-0.2	-1.1	-0.5	0.1	0.1	0.3	0.0	0.1

1. For some years, the revision process reflects more than the short-term revision round. For example, for 2000, methodological changes were implemented for both hours worked and gross domestic product, which had the effect of exaggerating the impact of short-term revisions.

Source(s): Statistics Canada, Bureau of Labor Statistics.

Table 4
Average annual growth of labour productivity in the business sector before and after revision, Canada and United States

	Canada		United States	
	Before revision	After revision	Before revision	After revision
			percent	
1981 to 2007	1.4	1.4	2.1	2.1
1981 to 2000	1.6	1.6	1.9	1.9
2000 to 2007	1.0	1.0	2.6	2.5
2000 to 2004	0.7	0.7	3.3	3.3
2004 to 2007	1.3	1.4	1.6	1.4

Source(s): Statistics Canada, 2008. "Labour productivity, hourly compensation and unit labour cost, third quarter 2008." The Daily, December 10 (Canadian data); Bureau of Labor Statistics, 2008. "Productivity and costs, second quarter 2008". NEWS, August 8 (US data).

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